

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

The subject matter of this application pertains to a control device for a vehicle that is able to take into account the cant amount of the road surface on which the vehicle is running. As set forth in independent Claim 1, the vehicle control device comprises road surface obtaining means for obtaining the cant amount of the road surface on which the vehicle is running in the vehicle body roll direction. The vehicle control device also comprises specific process executing means for comparing the obtained cant amount with a predetermined value and for starting a specific process for preventing an excessive vehicle roll angle when the obtained cant amount is greater than the predetermined value.

Solely for purposes of facilitating the Examiner's understanding, reference is made to the embodiment of the vehicle control device described in the present application. As discussed in the specification, the vehicle control device obtains a cant amount (CANT) of the road surface in the vehicle body roll direction. The device then compares this obtained cant amount (CANT) with a predetermined value (CANTref). When the obtained cant amount (CANT) becomes greater than the predetermined value (CANTref), the control device starts a specific process for preventing a roll angle of the vehicle from being excessive. The discussion beginning on page 29 of the application describes, by way of example, specific processes that can be started to prevent an excessive vehicle roll angle when the obtained cant amount (CANT) becomes greater than the predetermined value (CANTref).

The Official Action sets forth a rejection of all of the original claims in this application based on the disclosure in U.S. Patent No. 7,003,389 to *Lu et al.* That rejection is respectfully traversed for at least the following reasons.

Lu et al. discloses a system for determining a body-to-road roll angle. *Lu et al.* states that this system can be used in conjunction with a yaw control system, a rollover control system or a deployment device such as an airbag or a roll bar. *Lu et al.* describes that the disclosed system initially determines a first body-to-road roll angle $\theta_{b_to_r-1}$ as illustrated in step 90 of Fig. 6. This first body-to-road roll angle is determined as discussed in column 10 of *Lu et al.* based on the wheel departure angle θ_{wda} and the relative roll angle θ_{xr} generally shown in Fig 2 (i.e., $\theta_{b_to_r-1} = \theta_{wda} + \theta_{xr}$). Thereafter, as shown in step 92 of Fig. 6 and discussed near the bottom of column 10 of *Lu et al.*, the system determines a second body-to-road roll angle $\theta_{b_to_r-2}$. This determination of the second body-to-road roll angle is based on a global roll angle θ_x and a road bank angle θ_{bank} which are once again shown in Fig. 2. As best understood, the road bank angle θ_{bank} is akin to the cant amount of the road surface. Using these calculated values of the first and second body-to-road roll angles $\theta_{b_to_r-1}$, $\theta_{b_to_r-2}$, the system in *Lu et al.* determines a final body-to-road roll angle as noted in step 94 of Fig. 6 and as discussed near the bottom of column 12 of *Lu et al.* That is, the final body-to-road roll angle $\theta_{b_to_r}$ is calculated as $\theta_{b_to_r} = \beta * \theta_{b_to_r-1} + (1-\beta) * \theta_{b_to_r-2}$. At the bottom of column 12, *Lu et al.* describes that, based on the final body-to-road roll angle, at least one of the safety systems 38 shown in Fig. 4A (the airbag 40, the active braking system 41, the active front steering system 42, the active rear steering system 43, the active suspension system 44 and the active anti-roll bar system) is controlled.

One difference between the claimed vehicle control device and the system described in *Lu et al.* is that the claimed vehicle control device comprises specific process executing means which compares the obtained cant amount itself with a predetermined value and starts a specific process for preventing a roll angle of the vehicle from being excessive when the obtained cant amount itself becomes greater than the predetermined value. *Lu et al.* does not describe that the disclosed system compares the road bank angle θ_{bank} itself with a predetermined value and does not disclose that when the road bank angle θ_{bank} itself is greater than a predetermined value, the system starts a specific process for preventing a roll angle of the vehicle from becoming excessive. Rather, *Lu et al.* describes using the road bank angle θ_{bank} to calculate the second body-to-road roll angle $\theta_{\text{b_to_r-2}}$, using the second body-to-road roll angle $\theta_{\text{b_to_r-2}}$ to determine the final body-to-road roll angle $\theta_{\text{b_to_r}}$, and then controlling at least one of the safety systems based on the final body-to-road roll angle. Thus, *Lu et al.* cannot anticipate the claimed vehicle control device recited in independent Claim 1.

The comment at the top of page two of the Official Action concerning the means plus function recitation set forth in Claim 1 is not readily understood. Here, the Official Action comments that the language in Claim 1 reciting the road surface obtaining means does not properly invoke the sixth paragraph of 35 U.S.C. § 112 because the claim goes on to recite structure sufficient to perform the claimed function. It is not at all clear what structure the Official Action is referring to in this regard as the wording in Claim 1 uses the typical means plus function wording. Section 2181 of the Manual of Patent Examining Procedure states that a means plus function recitation will be interpreted as such unless the claim element is modified by

sufficient structure, material or acts for achieving the specific function. Here, the Official Action has not identified the claimed structure which modifies the means plus function language and performs the claimed function. It is respectfully submitted that this observation at the top of page two of the Official Action is misplaced. To the extent the Examiner maintains this position, the Examiner is respectfully requested to specifically address this point by identifying the claimed structure which modifies the means plus function language and performs the claimed function.

Page seven of the Official Action also refers to other language in the claims of this application and comments that such wording is a statement of intended use or a recitation of a method of using. Once again, it is respectfully submitted that this position is without basis. The noted recitations are neither statements of intended use nor recitations of method of use. Rather, the wording in question sets forth the function(s) associated with the means plus function recitations. As such, these recitations are entirely proper and must be considered in the context of assessing the patentability of the claimed subject matter.

The dependent claims in this application are allowable at least by virtue of their dependence from allowable independent Claim 1. Thus, at this time, all of the additional distinguishing aspects associated with the claimed vehicle control device as recited in the dependent claims are not discussed in detail. However, it is noted that Claim 12 recites that the specific process started by the specific process executing means differs depending upon the amount of time during which the obtained cant amount itself continues to be greater than the predetermined value as generally discussed on pages 29-31 of the present application and as generally shown in Fig. 4. Also, new dependent Claim 14 recites that the specific process

executing means starts different specific processes for preventing the roll angle of the vehicle from being excessive depending upon the amount of time during which the obtained cant amount itself continues to be greater than the predetermined value. *Lu et al.* does not disclose these additional aspects of the vehicle control device and so these dependent claims are further distinguishable over *Lu et al.*

In addition, new Claim 13 recites that the specific process executing means starts the specific process when the obtained cant amount becomes greater than the predetermined value and when the vehicle body speed is not less than a predetermined vehicle speed. This additional aspect of the control device, generally discussed near the top portion of page 54 of the present application, is also not disclosed in *Lu et al.* and so such claim is further distinguishable over the disclosure in *Lu et al.*

Early and favorable action with respect to this application is respectfully requested.


Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful

in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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